

# Taking Controls In-house

*Tired of your controls subcontractors' performance tainting your reputation? Considering taking controls in-house? Beware the pros and cons related to quality control, training, dealer agreements, and staffing.*

BY GLENN FRIEDMAN, P.E.

**DIRECT DIGITAL CONTROLS** are the heart of the complicated HVAC system. If the controls don't work, nothing works.

Because of the great value associated with controls — and perhaps, due to a recent bad experience — you may think it's time to establish a controls division in your company.

What better way to ensure ultimate control over this all-important facet of an HVAC project?

But before you leap, take a good look, and be sure you know what's required, and what can go wrong.

## The Risks of Subbing Out Controls

**1. Poor quality control reflects on you.** Controls have become exponentially more complicated in a short period of time, and a contractor must understand the functional implications of wanting to have a hand in their installation.

Today's controls have given us all kinds of convenience, and enable us to save energy, and very limited human interaction is required. You just set the computer to gather the data and implement the appropriate measures.

But this convenience can be hard to come by. As a principal at Taylor Engineering, a consulting engineering firm, I often oversee projects. I can say without hesitation that there are a

disproportionate percentage of difficulties associated with controls projects than with any other area of HVAC construction.

Every HVAC element now relies on the performance of the controls. If a problem is found during the commissioning stage, it's usually related to controls, as opposed to the sheet metal, piping or heating/cooling equipment.

You may have just completed the "perfect" project, from the sheet metal, right on down to the compressor and piping. There's no leakage, no other problems, and the installation looks great. But if the controls don't work, the customer's not happy. And typically, the mechanical contractor isn't sophisticated enough to step in and take over the controls. Nor is it very easy to bring someone else in to perform a diagnostic.

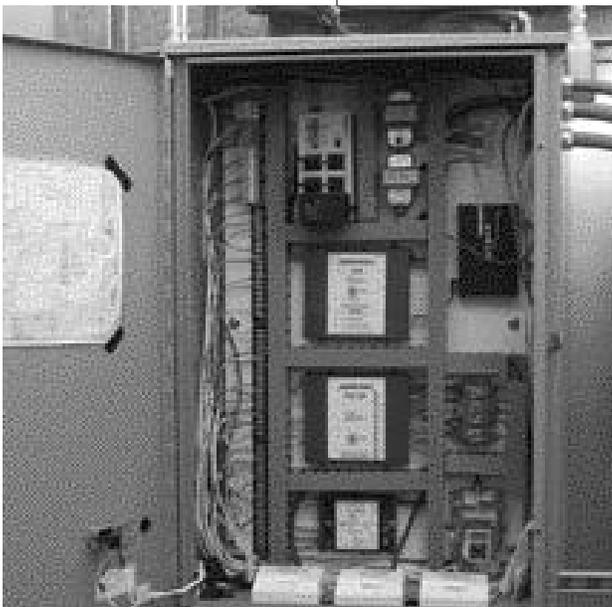
**2. Supplier attrition leaves you stranded.** There are a lot of people getting into the controls industry who soon get out of it; or, a competitor buys them out.

As an HVAC contractor, you must often win projects based on fixed-price bids. Which means, that if your subcontractor fails midway through a \$100,000 subcontract, you can be left high and dry, with a tremendous risk and responsibility. You've already paid the first controls contractor \$80,000 for the controls hardware and installation, and now you have to find another contractor to complete the remaining \$20,000 of programming and commissioning work.

I can almost promise you that it's going to cost you a lot more than \$20,000 to bring somebody in to finish the job. There is also the distant, but real, possibility that you would have to use a different manufacturer's product for the second half of the project. Some of these products are geographically

### LEARNING PATH

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exclusive. If so, there's only one contractor in an area licensed to perform the work, and the controls subcontractor may not be able to bring somebody on board in that exclusive territory with the skills on some other manufacturer's controls to meet your project commitments. It would likely be very hard to find an alternative controls contractor who would be willing to provide controls for 20% of a job, and carry 100% of the warranty.

Therefore, you might be forced to remove the original equipment, and start over with another manufacturer's controls.

**The Risks of Taking Controls In-house**

**1. Cost control takes time.** I would not say to an HVAC contractor who is considering entering the controls world, "You can do it cheaper" than a subcontractor, particularly in the formative years of the venture. There is a long learning curve associated with controls, the business is overly competitive, and it requires significant investments in time and money.

**2. Considerable learning curve.** Comprehensive controls' training includes education in AutoCAD design. Virtually 95% of what happens in direct digital controls is done with the aide of computer drafting software.

Your controls people have to be well grounded in HVAC, so they can put together a points list: Are we controlling temperature or pressure? Do we want to move a damper, start a compressor, or open a valve?

You need people who "understand" controls, and understand — or are able to learn — computer language.

Your would-be controls experts need to know prefunctional testing, calibration and installation.

The bottom line educational requirement is similar in volume to the training required to learn heating and air conditioning systems, but you must decide which people on your staff will be your controls experts. Even with your best people at the helm, it will be two to five years before your controls business begins to show a profit.

**3. Delegation can harm a service division.** Generally, the people in your company who will have the most aptitude and interest in controls are currently helping you run a profitable service business. The question then becomes: Is it better to leave those people in service, or bring them over to your controls department? Or, should you hire

new people, with the added payroll costs on top of the training?

**4. Dealer agreements have tough quotas.** There's a lot of risk and difficulty in choosing a supplier. For example, suppose you commit yourself to an ambitious controls company, and their biggest competitor buys them and stops supporting you?

Your choices of suppliers might also be limited right from the get-go. Most of the big players are taken, and are exclusive to another contractor. So if there's already a dealer in your marketplace, there's a chance they won't split up the territory for little ol' you.

If you do manage to land a dealer agreement, you will be expected to meet a quota, and prove to the manufacturer that you have market advantage, a supportive client base, and a skilled work force.

If you choose the wrong dealer:

- ◆ you might not be able to meet your dealer's productivity demands;
- ◆ they might become impatient with your company's learning curve;
- ◆ something could happen that's beyond your control, such as taking on too many other local dealers, or selectively cutting dealers to make the territory more exclusive.

A workable solution might be to keep the controls business under the wing of another company as a joint venture until you build it up to a point that you can spin it off, versus investing in another billing group and infrastructure.

The only other viable way to hit the ground running in controls is to buy another company. If you're a large mechanical contractor, and doing \$10 million of sales per year, you might be able to buy a smaller control contracting company. That approach gives you the people, the knowledge, and the dealer agreement, all in one. What it doesn't give you is control over that company's culture, or an easy integration into your company, which can be difficult and unpredictable.

Remember, I said to look before you leap! 



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